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The Files -

Task Order 3

31 July 1957

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Burroughs High-Speed Printing Technique

1. On 26 July 1957 I attended a briefing concerning the Burroughs High-Speed electrographic printing equipment being developed under contract to the U. S. Air Force Cambridge Research Center. The briefing was given by Mr. Robert F. Myers of the Cambridge Research Center and Dr. Herman Epstein of the Burroughs Research Center, Paoli, Pennsylvania.

2. Mr. Myers opened the discussion with a description of the Burroughs electrographic printing technique and its application to a high-speed page printer for use by the Air Force in transmission of weather information. The Burroughs Corporation has produced for the Cambridge Research Center a prototype high-speed page printer with a capability of printing a 64-character line from teletype input at the rate of approximately 2000 words per minute. The original prototype machine, now under test by the Cambridge Research Center, had only five character matrixes installed and therefore was capable of producing only a 5-character line. The Burroughs Corporation, however, proposes to fabricate service test models of this page printer utilizing a full 64-character line and printing at the same rate. Mr. Myers pointed out that this type of page printer should be excellent for high-speed operation due to the mechanical simplicity, since there are no moving parts except the paper transport, and electronic simplicity, in that each matrix can be actuated by a similar printed board electronic circuit. He further stated that it is Burrough's intention to transistorize completely the circuitry in the next version of this page printer.

3. The technique used consists of a stylus matrix for each character position which can be pulsed in any form to produce the complete alphabet or numerals as desired. The plastic coated paper is then magnetized at the points above the pulsed matrix. The paper is then dusted with a powdered magnetic ink so that the powdered ink adheres to the previously magnetized spots. Passing the paper and powdered ink then over the heated roller melts and fixes the ink permanently on the paper. The completely fixed printed paper is available approximately 5 seconds after

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the initial magnetization step takes place in the printer. Attached is a sample of this printed paper and a more detailed description of the technique written by Dr. Epstein.

4. As it turned out, the primary purpose of the meeting was a last ditch attempt on the part of the Cambridge Research Center to finance the further development of this page printer since their original request for funds in the 1958 budget had been turned down. Mr. Myers admitted that the weather people are the poorest in the Air Force and felt that possibly demonstrating the usefulness of the page printer for other general communications techniques might enhance the possibility of having the funding for this program reinstated. Following the meeting I discussed this problem with [redacted] from the office of Research and Development, and he stated that it seemed very unlikely that the funding for this project would be reinstated; and that if we were interested in following the project, we should contact Burroughs Corporation directly. In addition, I asked Dr. Epstein to send to me at the [redacted] address further technical details on the technique and indicated that we were interested and may contact him in the future.

5. It is notable that Mr. Myers indicated that he and the Burroughs Corporation had estimated the production cost of these 2000-word-per-minute printers at approximately \$3,000 per unit. This, of course, must be compared with the \$75,000 per unit Fatter instrument that is presently being produced for the AS-4A. Mr. Myers further stated that a tape printing unit could possibly be produced for less than \$1,000 per copy in fairly sizable quantity. A unit of this type, if small enough and cheap enough, could well be applicable to the new AS-5 sub-base equipment.

Attachment: See above

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